

ABSTRACT OF THE DISCLOSURE

Shadows, which play an important role in perceiving the shape and texture of an object, are simulated interactively in a real time, self-shadowing of a bump mapped surface for a computer rendered object. A computer graphics textured object function defines a horizon map over an orientation in a tangent space of the object using different textures or basis functions. The implementation can be performed using commodity graphics hardware by precomputing the horizon map for limited visibility for each point on the bump mapped surface given light in each of a plurality of radial directions. The horizon map is used to produce self-shadowing of the bump mapped surface of the object.

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